



Universitat d'Alacant  
Universidad de Alicante



# Usabilidad y Accesibilidad: una breve introducción

Sergio Luján Mora  
sergio.lujan@ua.es  
@sergiolujanmora

# Usabilidad

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# Accesibilidad

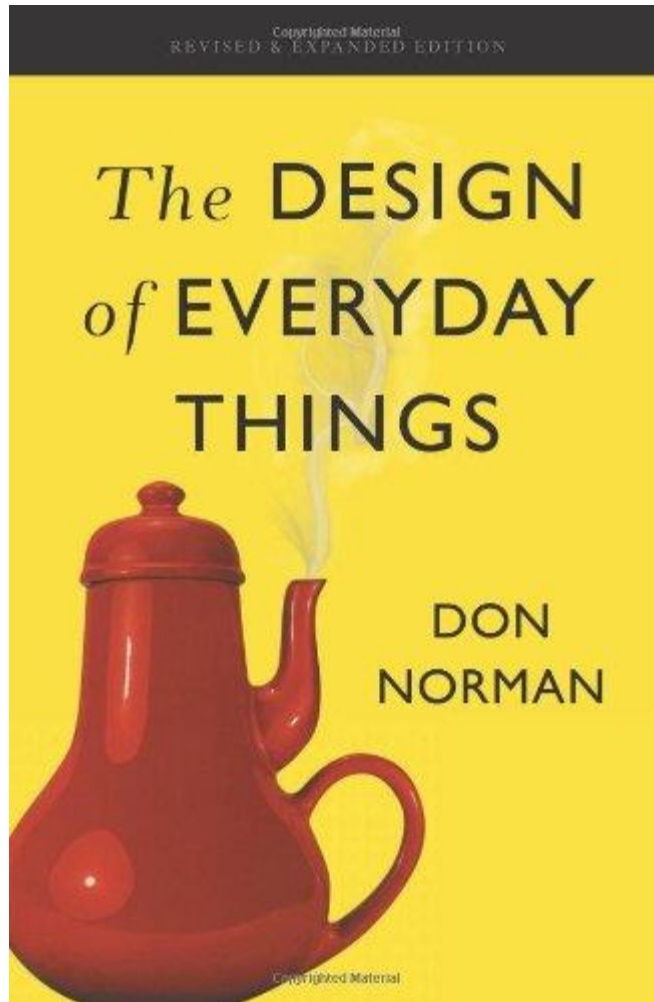
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# Usabilidad

**Usabilidad**

**=**

**Facilidad de uso**

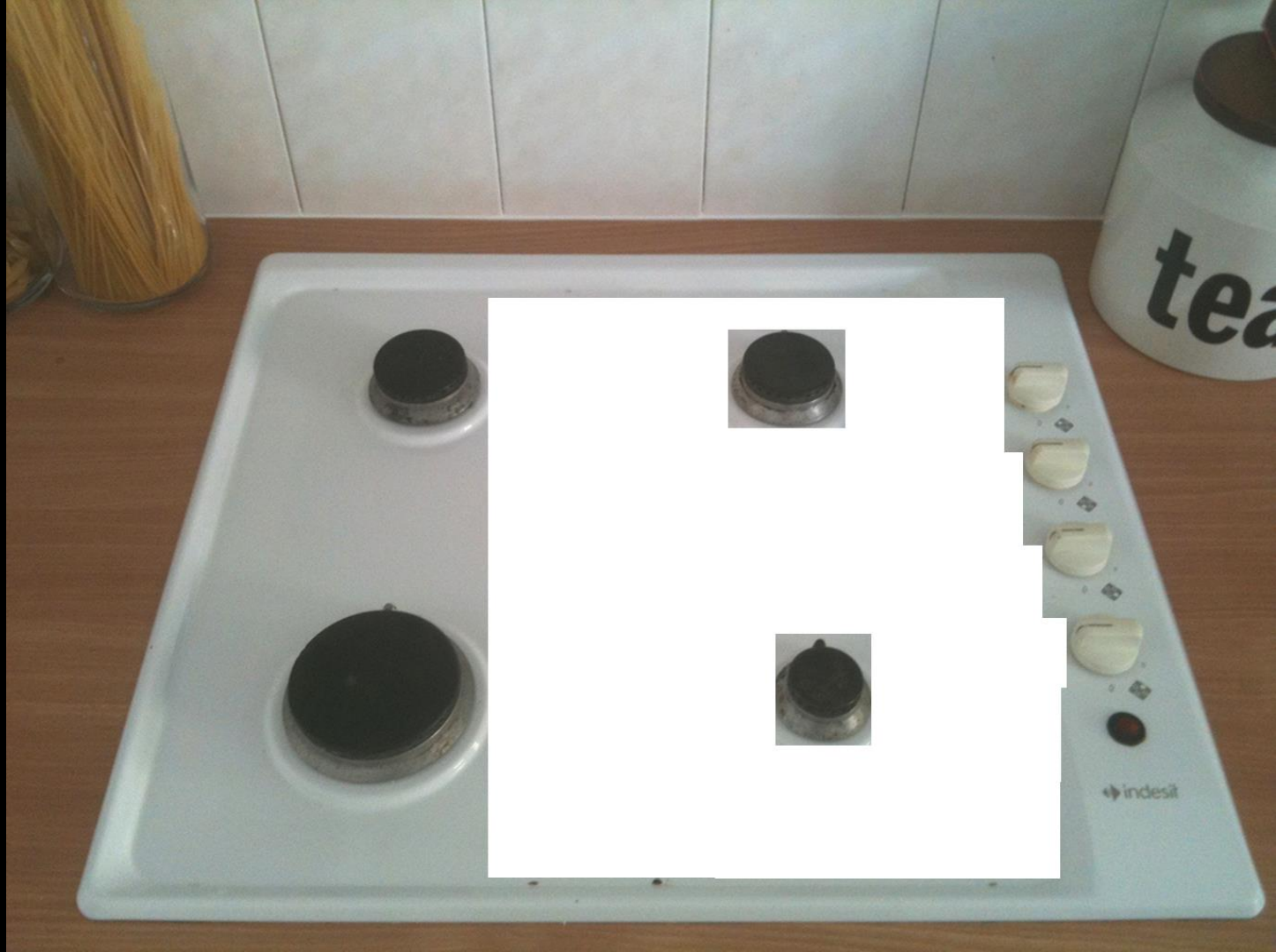


**1988**  
**The Psychology of Everyday Things**

















**Difícil de usar**

**Fácil de usar**



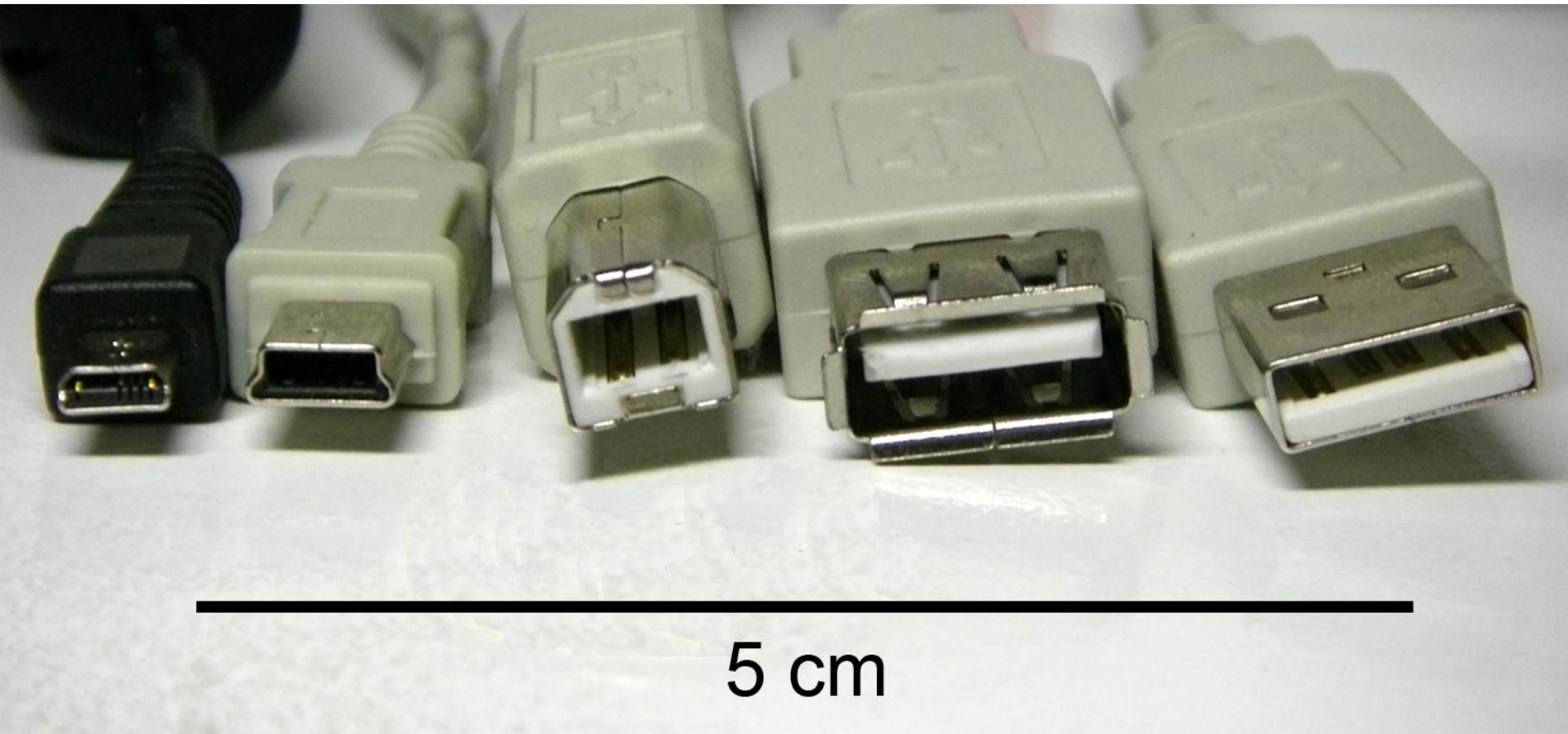
**1996**

**USB**











Plug in USB



VIA 95AG.COM

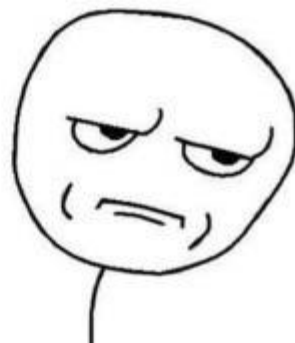
Doesn't fit,  
flip it



Doesn't fit,  
flip it again



Now it fits



# facebook

Correo o teléfono

☐ No cerrar sesión

Contraseña

Entrar

[¿Has olvidado tu contraseña?](#)

## I hate plugging in the USB cable the wrong way está en Facebook.

Para conectar con I hate plugging in the USB cable the wrong way, regístrate hoy en Facebook.

[Regístrate](#)[Entrar](#)

## I hate plugging in the USB cable the wrong way

A 264 personas les gusta esta página

Comunidad

Because you do it, too.

[Información](#)[Fotos](#) **264**[Me gusta](#)

# facebook

Correo o teléfono

☐ No cerrar sesión

Contraseña

Entrar

¿Has olvidado tu contraseña?

**I always try to insert a USB drive the wrong way first.  
está en Facebook.**

Para conectar con I always try to insert a USB drive the wrong way first., regístrate hoy en Facebook.

Regístrate

Entrar



**I always try to insert a USB drive the wrong way first.**

A 622 personas les gusta esta página

Comunidad  
Every. Single. Time!!

Información



Fotos

👍 622

Me gusta



**1996**

.

.

.

**2014**



**TRENDING NOW**  
Breaking: NASA suspends work with Russia over Ukraine crisis

f t g+ You Tube

7  
NEW ARTICLES

- PERSON
- LONGFORM
- VIDEO
- REVIEWS
- TECH
- SCIENCE
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- FORUMS
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◀ PREVIOUS STORY  
Fantastical 2 for iPad rethinks the tablet calendar

NEXT STORY ▶  
After Healthcare.gov, can the government make its technology suck less?

MOBILE TECH

413  
COMMENTS

# This is the reversible USB cable that will end your frustrations

By **Vlad Savov** on April 2, 2014 09:17 am ✉ Email 🐦 @vladsavov

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# This is the reversible USB cable that will end your frustrations



By **Vlad Savov** on April 2, 2014 09:17 am Email @vladsavov







USB 3.1  
Type-C

USB 3.1  
Standard-A

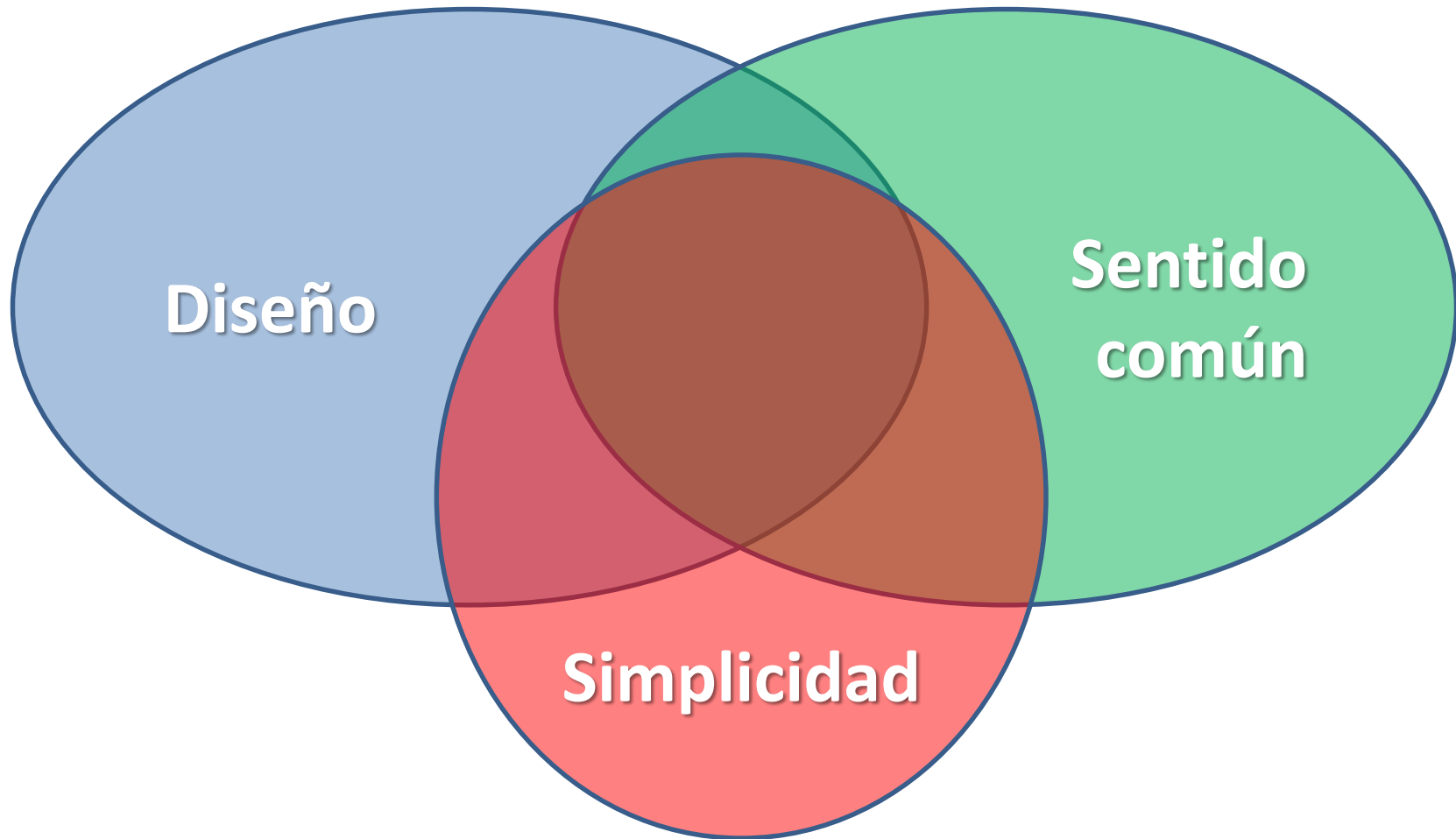
USB 3.1  
Type-C

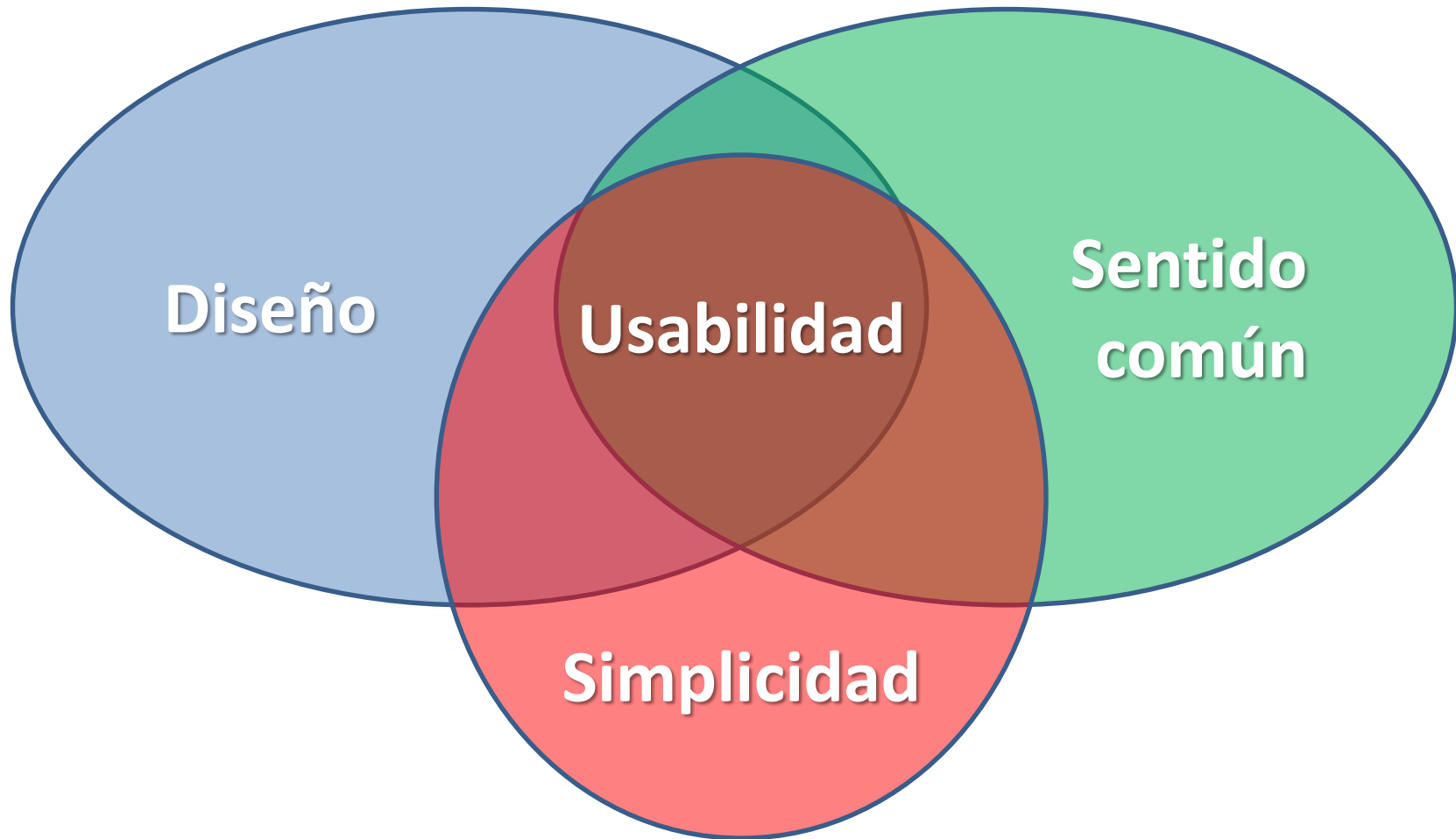
USB 3.1  
Micro-B

*Artist renderings courtesy of Foxconn, final design subject to change*



*Artist renderings courtesy of Foxconn, final design subject to change*





**¿Usabilidad**

**=**

**Facilidad de uso?**

**Usabilidad**

**=**

**Minimizar los errores**

**¿Un avión se puede estrellar y  
matar a cientos de personas...  
por un fallo de usabilidad?**





- Portada
- Portal de la comunidad
- Actualidad
- Cambios recientes
- Páginas nuevas
- Página aleatoria
- Ayuda
- Donaciones
- Notificar un error
- En otros proyectos
- Wikimedia Commons

- Imprimir/exportar
- Crear un libro
- Descargar como PDF
- Versión para imprimir

- Herramientas
- Lo que enlaza aquí
- Cambios en enlazadas
- Subir archivo
- Páginas especiales
- Enlace permanente
- Información de la página
- Elemento de Wikidata

Artículo **Discusión**

No has accedido [Discusión](#) [Contribuciones](#) [Crear una cuenta](#) [Acceder](#)

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# Vuelo 148 de Air Inter

Coordenadas: 48°25′38″N 7°24′19″E [\(mapa\)](#)

El **Vuelo 148 de Air Inter** era un vuelo regular de **Air Inter**, que se estrelló en la **Cordillera de los Vosgos**, cerca del **Monte de Santa Odilia**, el **20 de enero** de **1992**, mientras realizaba su aproximación al **Aeropuerto de Estrasburgo**. Solo 9 personas a bordo sobrevivieron.<sup>1</sup>

- Índice** [\[ocultar\]](#)
- 1 Accidente
  - 2 Consecuencias
  - 3 Dramatización
  - 4 Véase también
  - 5 Referencias
  - 6 Bibliografía

## Accidente [\[editar\]](#)

El vuelo 148, al mando del capitán Christian Hecquet y del primer oficial Joël Cherubin,<sup>2</sup> salió del **Aeropuerto de Satolas** (ahora conocido como **Aeropuerto de Lyon-Saint Exupéry**) en **Lyon, Francia**. Mientras preparaba su vectorial para una aproximación VOR DME a la pista 05 a **Estrasburgo**, se estrelló a las 19:20:33 **CEST** (18:20:33 **UTC**) en las montañas a una altitud de 2.620 pies (800 m).<sup>1</sup>

Los pilotos no tuvieron ninguna advertencia del inminente impacto porque **Air Inter** no habían equipado sus aviones con sistemas de advertencia de proximidad del terreno (GPWS). Esto se debió a que Air Inter - frente a la competencia feroz de **Train à Grande Vitesse** - alentó a sus pilotos para volar más rápido a baja altitud (hasta 350 nudos por debajo de 10.000 pies de altura, mientras que otras aerolíneas generalmente no superan los 250 nudos), y los sistemas GPWS les daba demasiadas falsas advertencias molestas.<sup>3</sup>

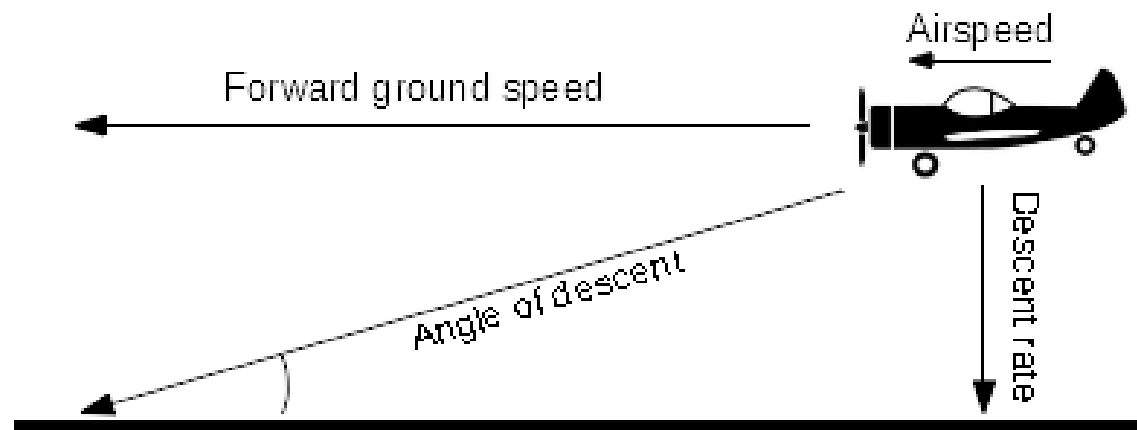
El vuelo 148 era el tercero de una serie de accidentes causados por lo menos en parte, por lo que se cree que es la falta de

## Vuelo 148 de Air Inter



El **Airbus A320** de **Air Inter** accidentado, en 1991.

<b>Fecha</b>	20 de enero de 1992
<b>Causa</b>	Vuelo controlado contra el terreno debido a un error de la torre de control y la entrada incorrecta del ángulo de descenso por el capitán
<b>Lugar</b>	Barr cerca de Estrasburgo, Francia <sup>1</sup>
<b>Coordenadas</b>	48°25′38″N 7°24′19″E
<b>Origen</b>	Aeropuerto de Lyon-Saint Exupéry
<b>Destino</b>	Aeropuerto de Estrasburgo
<b>Fallecidos</b>	87 (82 pasajeros y 5 tripulantes)
<b>Heridos</b>	9 (8 pasajero y un tripulante)
<b>Implicado</b>	







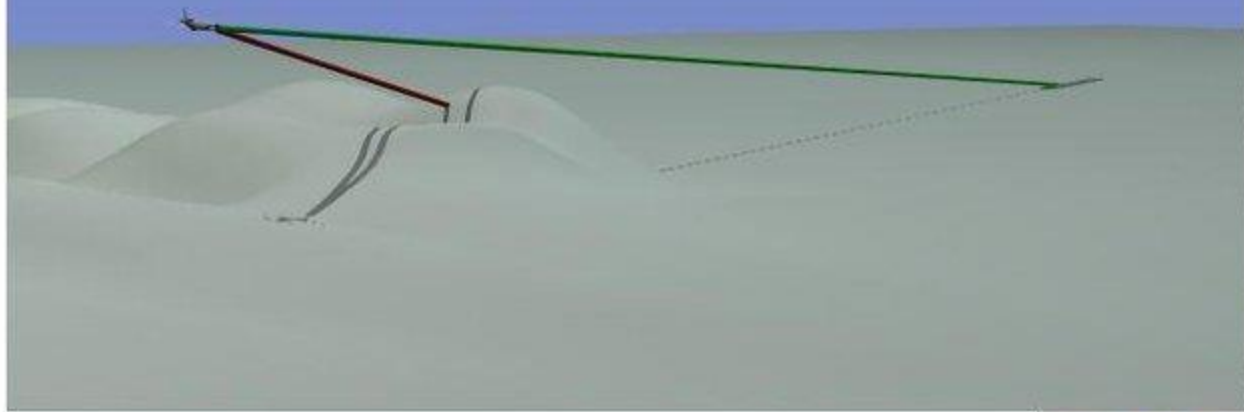


## Air Inter Flight 148 Flight Path Animation

QAR TIME 3019

- 3.3 FPA = 3.3 degree flight path angle

- 33 V/S = 3,300 feet/min vertical speed







# Glossary » mode error

## mode error

a type of slip where a user performs an action appropriate to one situation in another situation, common in software with multiple modes. Examples include drawing software, where a user tries to use one drawing tool as if it were another (e.g. brushing with the Fill tool), or text editors with both a command mode and an insert mode, where a user accidentally types commands and ends up inserting text.

**Related term(s):** [automaticity](#), [capture error](#), [error](#), [modal](#), [slip](#)

## Glossary Terms A-Z

a	b	c	d	e	f	g	h
i	j	k	l	m	n	o	p
q	r	s	t	u	v	w	x
y	z	123					

## Glossary Categories

[Accessibility](#) (88)

[Acronyms](#) (102)





- Main page
- Contents
- Featured content
- Current events
- Random article
- Donate to Wikipedia
- Wikipedia store

- Interaction
- Help
- About Wikipedia
- Community portal
- Recent changes
- Contact page

- Tools
- What links here
- Related changes
- Upload file
- Special pages
- Permanent link
- Page information

Article

Talk

Read

Edit

View history

Search Wikipedia

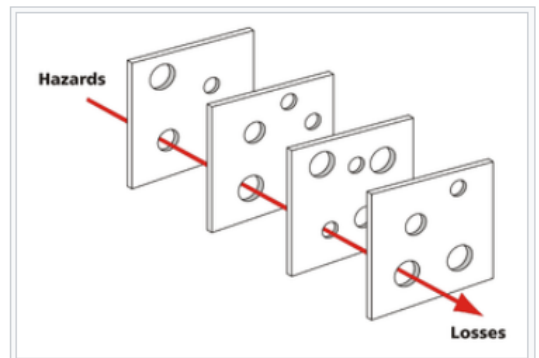
# Swiss cheese model

From Wikipedia, the free encyclopedia

The **Swiss cheese model** of accident causation is a model used in [risk analysis](#) and [risk management](#), including [aviation safety](#), [engineering](#), [healthcare](#), emergency service organizations, and as the principle behind [layered security](#), as used in [computer security](#) and [defense in depth](#). It likens human systems to multiple slices of [swiss cheese](#), stacked side by side, in which the risk of a threat becoming a reality is mitigated by the differing layers and types of defenses which are "layered" behind each other. Therefore, in theory, lapses and weaknesses in one defense do not allow a risk to materialize, since other defenses also exist, to prevent a [single point of failure](#). The model was originally formally propounded by Dante Orlandella and James T. Reason of the [University of Manchester](#),<sup>[1]</sup> and has since gained widespread acceptance. It is sometimes called the "cumulative act effect".

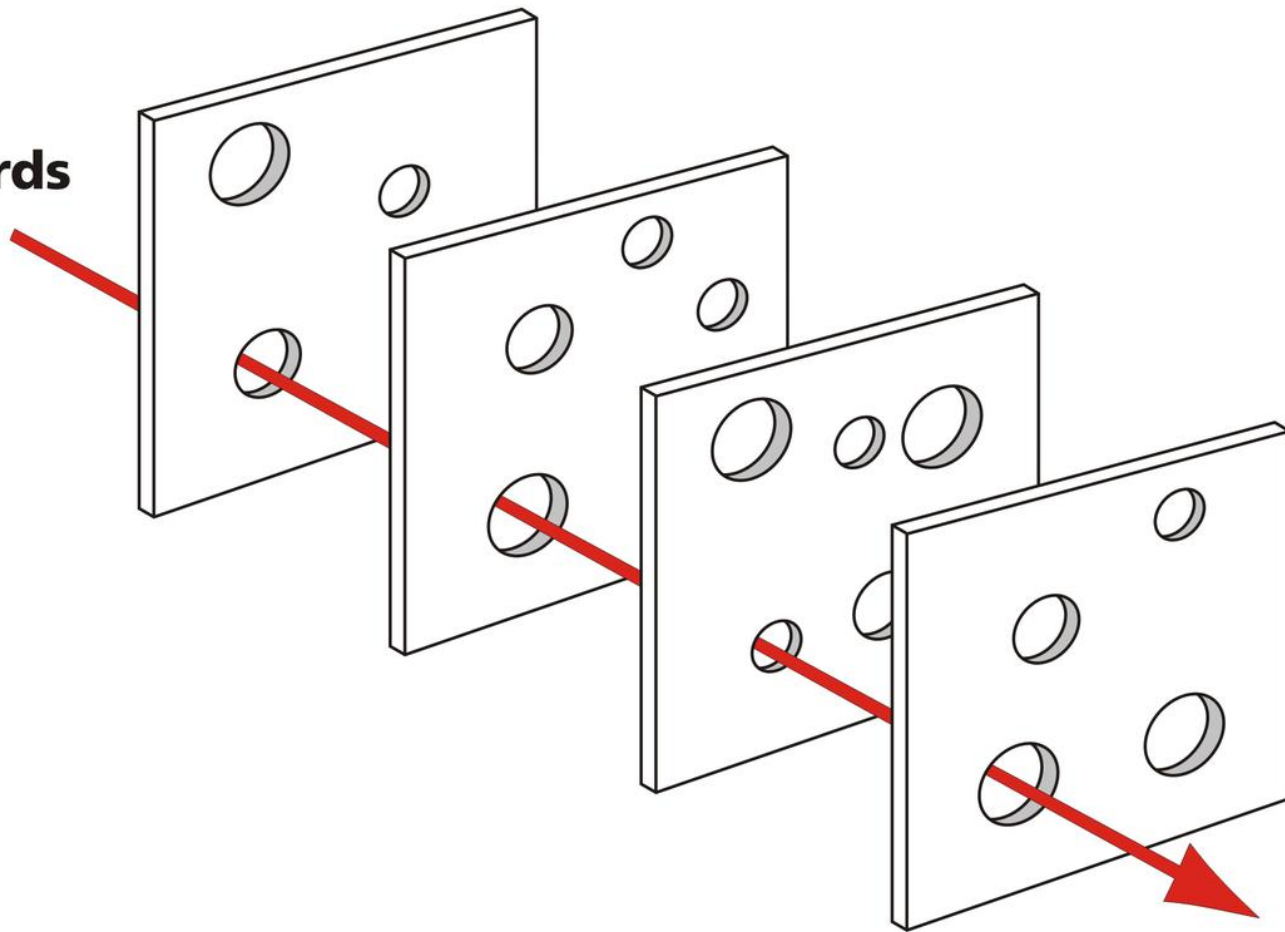
Although the Swiss cheese model is respected and considered to be a useful method of relating concepts, it has been subject to criticism that it is used too broadly, and without enough other models or support.<sup>[2]</sup>

- Contents** [\[hide\]](#)
- 1 Failure domains
  - 2 Holes and slices
  - 3 Active and latent failures
  - 4 Applications
  - 5 See also



The Swiss cheese model of accident causation illustrates that, although many layers of defense lie between hazards and accidents, there are flaws in each layer that, if aligned, can allow the accident to occur.

**Hazards**



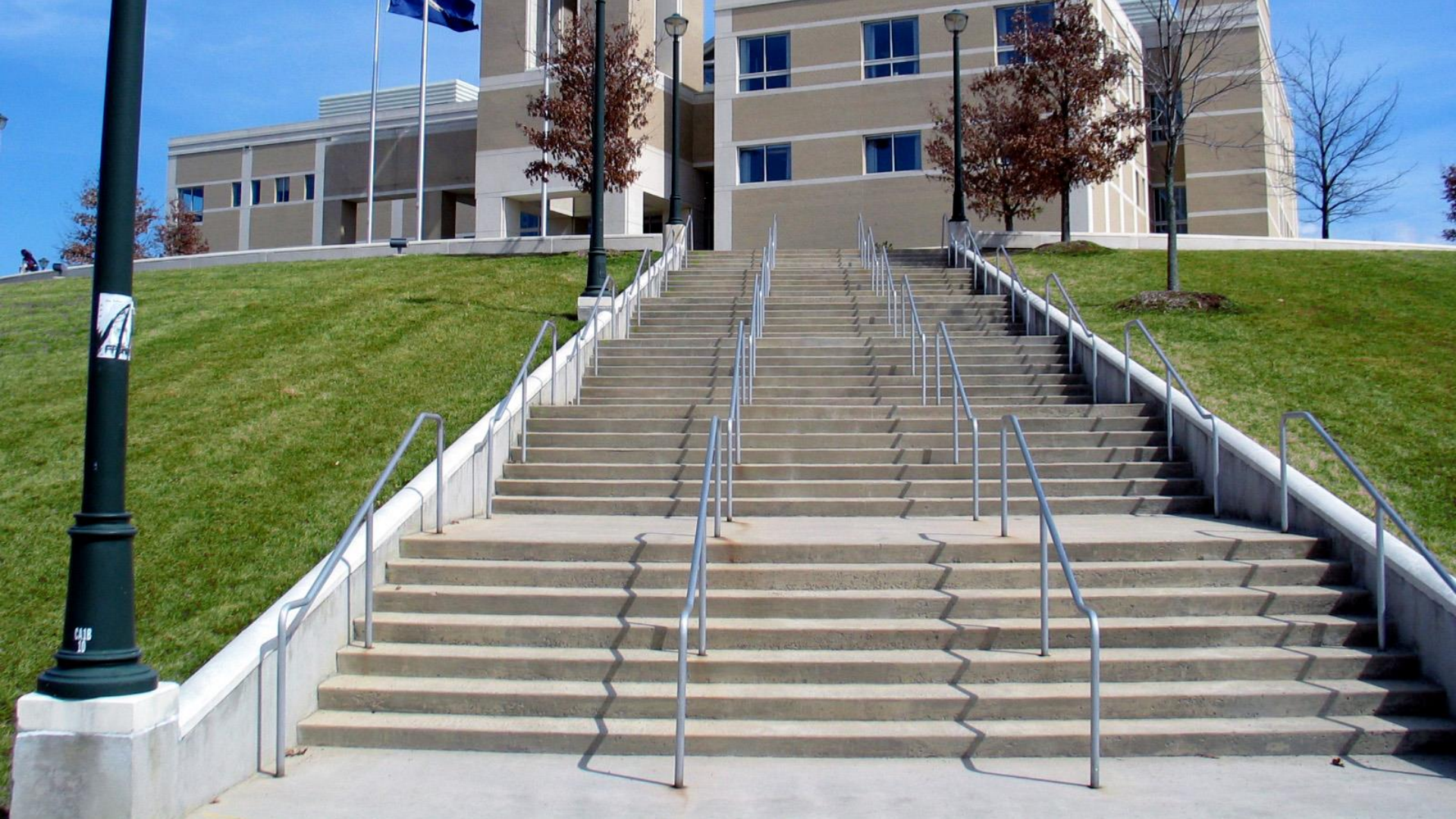
**Losses**

# Accesibilidad

**Diseño inclusivo**

**Diseño universal**

**Diseño para todos**



**¿Cuál es la solución?**







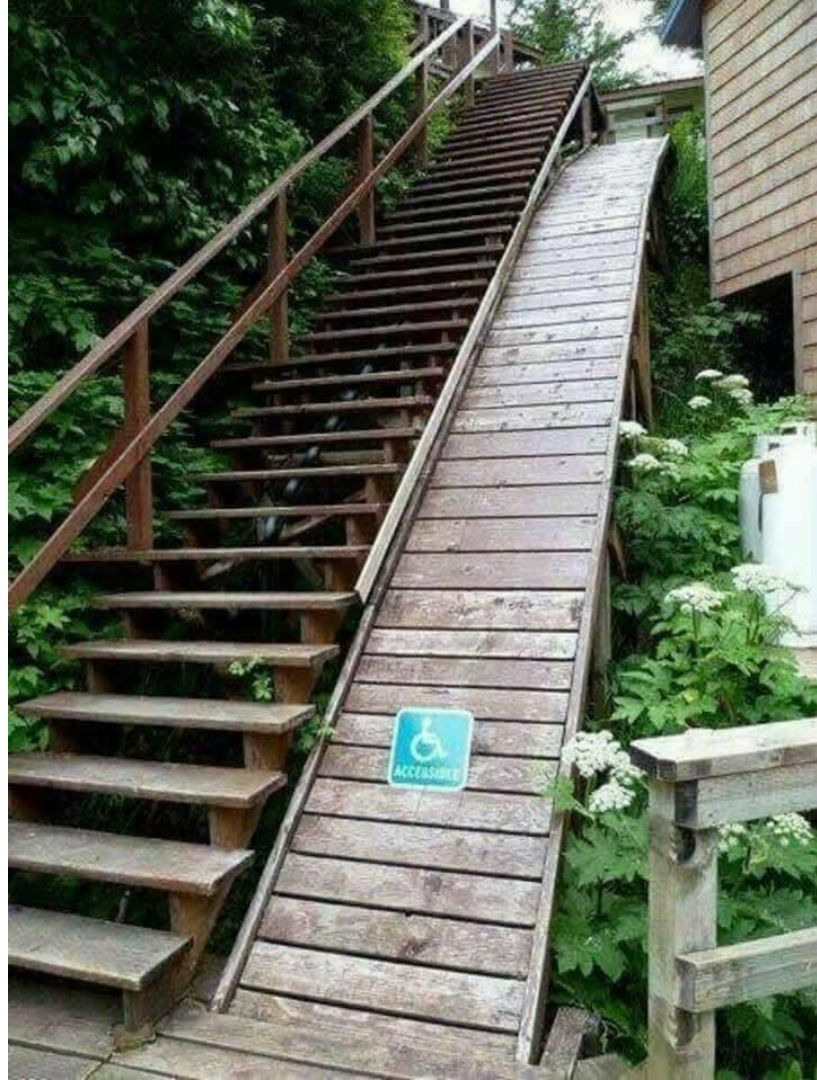


**¿Cualquier rampa vale...?**









**¿Se construyen bien  
las rampas...?**









**arq.mx**

TRETA.COM.BR



**¿Siempre se pueden usar  
las rampas...?**



**¿No se puede hacer  
mejor?**

**¿No se puede hacer un  
diseño inclusivo,  
un diseño universal,  
un diseño para todos?**

































**¿La accesibilidad es sólo  
para las personas  
con discapacidad?**



**HANDICAPPED  
RAMP**









# Tres consejos



**Piensa en el usuario**

**Piensa en el USUARIO**

**Piensa en el USUARIO**

**Piensa en el USUARIO**

**Piensa en el USUARIO**

**Piensa en el USUARIO**



**¡No pienses en ti!**

# Usabilidad web





**CAR LEASING**  
Want a cheap new lease car? Start HERE!



My cheapest leasing deals!

Click to chat with Ling

**ABARTH CAR LEASING**

500  
500 Convertible  
595  
595 Convertible  
Punto Evo

**ALFA ROMEO LEASE CARS**

Note: I live inside this website Monday to Friday 9am-6pm, to give you the very best service and make your experience a happy one! - I am Ling, accept no substitutes

**LINGS CARS.com**  
UK CONTRACT HIRE CARS FROM LING VALENTINE  
Version 237.1. You can trust me! ... In 2014 I'll rent over £75 million of cars (at RRP)!

Play stupid game  
NEW

**CAR LEASING - CONTRACT HIRE - CHEAP LEASE CARS**

Home Cars and Vans How It Works Price Lists About Ling **me! WAH! 1500+ Letters** Fun Stuff Quote/Order

Business Customer Pricing Personal Customer Pricing

**NEW SEXY**  
christine full rep here

**FEAR CARS**

Search Cars Here Go

@LINGS CARS Follow Me

**LING'S LIVE TWITTER FEED**

mistrz\_yon: Marcin Winkler, tak się robi biznes w internecie. I nie mów, że Cię to nie przekonuje... :) <http://t.co/vBZBJvbsiQ>

LINGS CARS: RT @Entertainkids: @LINGS CARS Hello you, been to long. I have been recommending your website today. :) >> Thanks so much Vicky!

Entertainkids: @LINGS CARS Hello you, been to long. I have been recommending your website today.

**LIVE WEB CAM**

Intro Film News Blog Office TV Contact Moan Links Play Quiz Privacy Policy Google Visitors

EU cookie law. Piss off Von Rumpy. Me... I hammer visitors to death with cookies, so I can find out what they want. Cookies allow my website to serve visitors the content they need. Get used to it. The EU cookie law is an ass. - Ling

Privacy and Electronic Communications (EC Directive) Regulations 2011 BLAH

cookie:identify salary\_level=MADE of CASH;  
cookie:steal credit card no mail out;  
cookie:LOL ugliness=ugly bugger.

You can't find a car? Apply for a CAR QUOTE

Richard Farleigh - "I wanted to invest; I was amazed by Ling's complete lack of nerves, and also by her business acumen."

Duncan Bannatyne - "I wanted to invest... but ye turn'd me dooon!"

Deborah Meaden - "Harrumph! I'm out!"

**UK WARNING:** Customers reporting many other internet prices are hiding true lease costs!  
**BEWARE DODGY COMPANIES SELLING HIGH INITIAL RENTAL "6+" LEASES**

VIZ Ling is OFFICIAL VIZ ethnic business ambassador!

PLAY STUPID CRASH GAME!

CHEAP INSURANCE

Google Spider Food



Close (X)

**Talk!**

**Props/Quotes**

- Offline Wai
- Offline Randall
- Offline Yajun
- Offline Ling V

**Admin**

- >> ONLINE Guy
- >> ONLINE Holly
- Offline Jon
- Offline Adrian

**Aftersales**

- Offline Ling V
- Offline Chris

<http://www.lingscars.com/>

# Ofrecer un comportamiento predecible

Origen  Destino

Día  Mes  Año

*Destino* [Ver todos los destinos](#)

*Entrada* *Salida*  

Domingo

Lunes

Origen :  Salida :  Hora :

Destino :  Regreso :  Hora :

Origen :  Ida :

Destino :  Vuelta :



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Topic: [Tech Industry](#)



Justify

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# Expedia on how one extra data field can cost \$12m

**Summary:** *How to root out hidden profits with analytics...*



By Nick Heath | November 1, 2010 -- 16:15 GMT (09:15 PDT)

[Follow @NickJHeath](#)

How to root out hidden profits with analytics...

Online travel firm Expedia has found that data analytics can deliver a multi-million dollar kick to a company's bottom line.

The company used SAS analytics to identify a single change to a web page that generated an overnight surge in sales, Expedia's VP of global analytics and optimisation Joe Megibow told the SAS Premier Business Leadership Series conference in Las Vegas last week.

Expedia analysts realised the site needed to be changed after investigating why many customers who clicked the 'Buy Now' button on the company's site did not complete the transaction.

"This is someone who was on our site, found the right location and hotel, put in all their billing

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[Yahoo explores online video with NDN acquisition talks](#)



[Silicon Valley boosts the fortunes of India's most exciting political party](#)

0  
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0  
Votes

22  
Likes

Like

17

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1

Share

more +



Account My Scratchpad 1 My Trips Support

Home Vacation Packages Hotels Cars Flights Cruises Things to Do Deals Rewards Mobile

✕ Flights

Hotels

Over 240,000 worldwide

Package Deals

- Flight + Hotel
- Flight + Hotel + Car
- Flight + Car
- Hotel + Car

Cars

Cruises

Things to Do

Roundtrip One way Multiple destinations

Flying from

City or airport

Flying to

City or airport

Departing

mm/dd/yyyy

Returning

mm/dd/yyyy

Adults (18+)

1

Children (0-17)

0

Advanced options

Add a hotel

Add a car

Search

BEST PRICE  
GUARANTEE

SAVE AN EXTRA \$25

On your first Expedia App hotel booking.\*

GET THE APP



### Variant A (Original)

#### Cardholder name

First name:\*

Last name:\*

Company name:

#### Primary billing address

Street:\*

City:\*

### Variant B (Revision)

#### Cardholder name

First name:\*

Last name:\*

#### Primary billing address

Street:\*

City:\*



### Variant A (Original)

#### Cardholder name

First name:\*

Last name:\*

Company name:

#### Primary billing address

Street:\*

City:\*

### Variant B (Revision)

#### Cardholder name

First name:\*

Last name:\*

#### Primary billing address

Street:\*

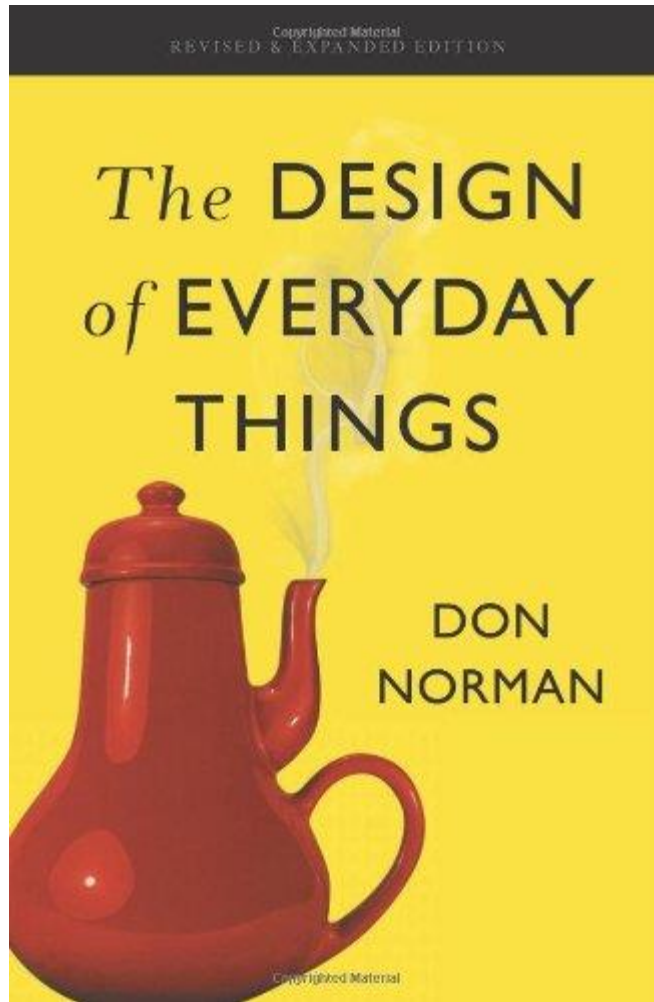
City:\*

**¿Consejos?**

**Piensa en el USUARIO**

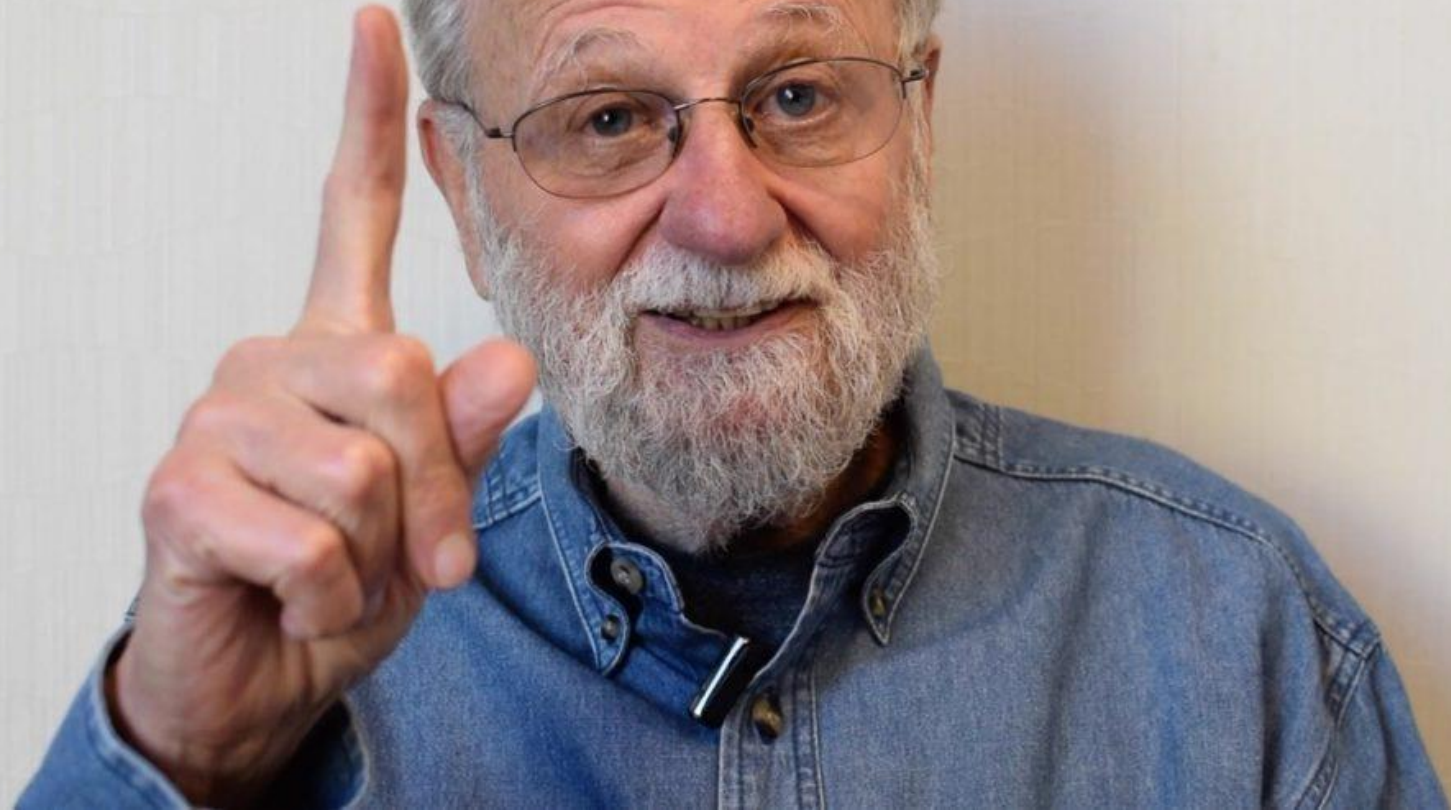
**Piensa en el USUARIO**

**Piensa en el USUARIO**



**1988**  
**The Psychology of Everyday Things**

**Don Norman**





**Jakob  
Nielsen**



# NN/g Nielsen Norman Group

Evidence-Based User Experience Research, Training, and Consulting

- HOME
- REPORTS
- TRAINING
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- ARTICLES**
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### Really Break Grammar Rules on Websites: Part Two

April 1, 2014

Deviating from old writing guidelines makes digital content seem very fresh!!

### Mobile Navigation: Image Grids or Text Lists?

March 30, 2014

For mobile navigation, image grids should be saved for deeper IA levels where visual differentiation between menu items is critical.

### Satisficing: Quickly Meet Users' Main Needs

March 30, 2014

Unless faced with life-changing information, most site visitors won't read all of the content provided but settle for a "good-enough" answer. Better sorting and clearer writing satisfy users without exhausting the limited time they're willing to spend on a website.

### Break Grammar Rules on Websites for Clarity

March 23, 2014

**Jakob Nielsen  
Hoa Loranger**

**Prioritizing  
Web Usability**

*Pregúntate si alguien que sólo lea las dos primeras frases de tu página obtendrá la información que quieres transmitir.*

*Con pocas excepciones, la gente visita la Web por su utilidad, no por su belleza. Tener un sitio visualmente atractivo es bueno, por supuesto, pero el contenido es sagrado. Después de todo, cuando la gente escribe sus preguntas en los motores de búsqueda, no pregunta por los atributos estéticos – está buscando información.*

# Steve Krug





Steve Krug



# DON'T MAKE ME THINK

*revisited*

and Mobile  
A Common Sense Approach to Web Usability

- 1. No me hagas pensar.*
- 2. No importa cuántas veces tengo que hacer clic, siempre y cuando cada clic es una elección inconsciente e inequívoca.*
- 3. Deshágase de la mitad de las palabras de cada página, a continuación, deshágase de la mitad de las que quedan.*



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Universidad de Alicante



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